

Project Title

NCID ICU Retrieval Process for Intubated Patients

Project Lead and Members

Project lead: Lim Voon Ping

Project members: Li Caihua ; Nichole Tan Xiu Lang; Lee Wan Lih; Ling Ging Poh;

Emelin Tan Pei Xin

Organisation(s) Involved

National Centre for Infectious Diseases

Healthcare Family Group(s) Involved in this Project

Nursing

Applicable Specialty or Discipline

Respiratory Therapy, Intensive Care Medicine

Project Period

Start date: September 2019

Completed date: February 2020

Aims

To improve compliance to NCID Protocol* for retrieval of intubated patients by retrieval team from 46 % to 100% over a 6-month period

* NCID Protocol refers to:

- a) *activation response time of within 15mins on site*
- b) *completion of transport ventilator 4 Alarms safety check*
- c) *Bring required equipment as stipulated on the protocol during retrieval*

Definition: Retrieval = transportation of intubated patients to NCID ICU from general ward within NCID

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

See poster appended/ below

Additional Information

NHG Quality Improvement 2021: Developing a Flexible & Sustainable Workforce
(Best Award)

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign, Quality Improvement, Value Based Care, Safe Care, Risk
Management, Adverse Outcome Reduction

Keywords

Patient Retrieval Protocol, Intubated Patients, Intra-Hospital Transfer

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National Centre for Infectious Diseases

NCID ICU Retrieval Process for Intubated Patients

Lim Voon Ping
NCID ICU Ward 3E

Mission Statement

To improve compliance to NCID Protocol for retrieval of intubated patients by retrieval team from 46 % to 100% over a 6 month period

Team Members

	Name	Designation	Department
Team Leader	Lim Voon Ping	Senior Nurse Clinician	NCID ICU
Team Members	Li Cai Hua	Nurse Clinician	NCID ICU
	Nichole Tan Xiu Lang	Assistant Nurse Clinician	NCID ICU
	Lee Wan Lih	Senior Staff Nurse	NCID ICU
	Ling Ging Poh	Senior Staff Nurse	NCID ICU
	Zhang Yu Yan	Senior Staff Nurse	NCID ICU
	Emelin Tan Pei Xin	Senior Respiratory Therapist	Respiratory Therapy

Mentor: Ms Yu Liang

Sponsors: Dr Benjamin Ho & Ms K Patmawali

Evidence for a Problem Worth Solving

REVIEW Open Access

Transferring the critically ill patient: are we there yet?

Joep M Drooght¹, Marje Sm², Anthony R Abalom³, Jack M Ligenberg⁴ and Jan G Jansen⁵

Am J Crit Care. 2011; March; 20(2): 153-162. doi:10.4037/ajcc.2011.478.

Adverse Clinical Events During Intra-hospital Transport by a Specialized Team: A Preliminary Report

Ricky Kuo, MD, MPH, Paul Brown, NREMT-P, Cheryl Ness, RN, and James Scheulen, MBA, PA-C

The importance of having a proper retrieval :

- to ensure patient's safety and lower incidence of technical problem (equipment)
- Retrieval team able to transfer sicker patients with fewer and less severe adverse events

Critical Care (2015) Vol 19

Caring for ill patients during intra-hospital transport is a high risk activity:

- Use of dedicated transfer team can potentially reduce the number of adverse events
- Causes of adverse event were multi-factorial with mainly human based factors contributing such as inadequate preparation, failure to follow protocol and errors of problem recognition

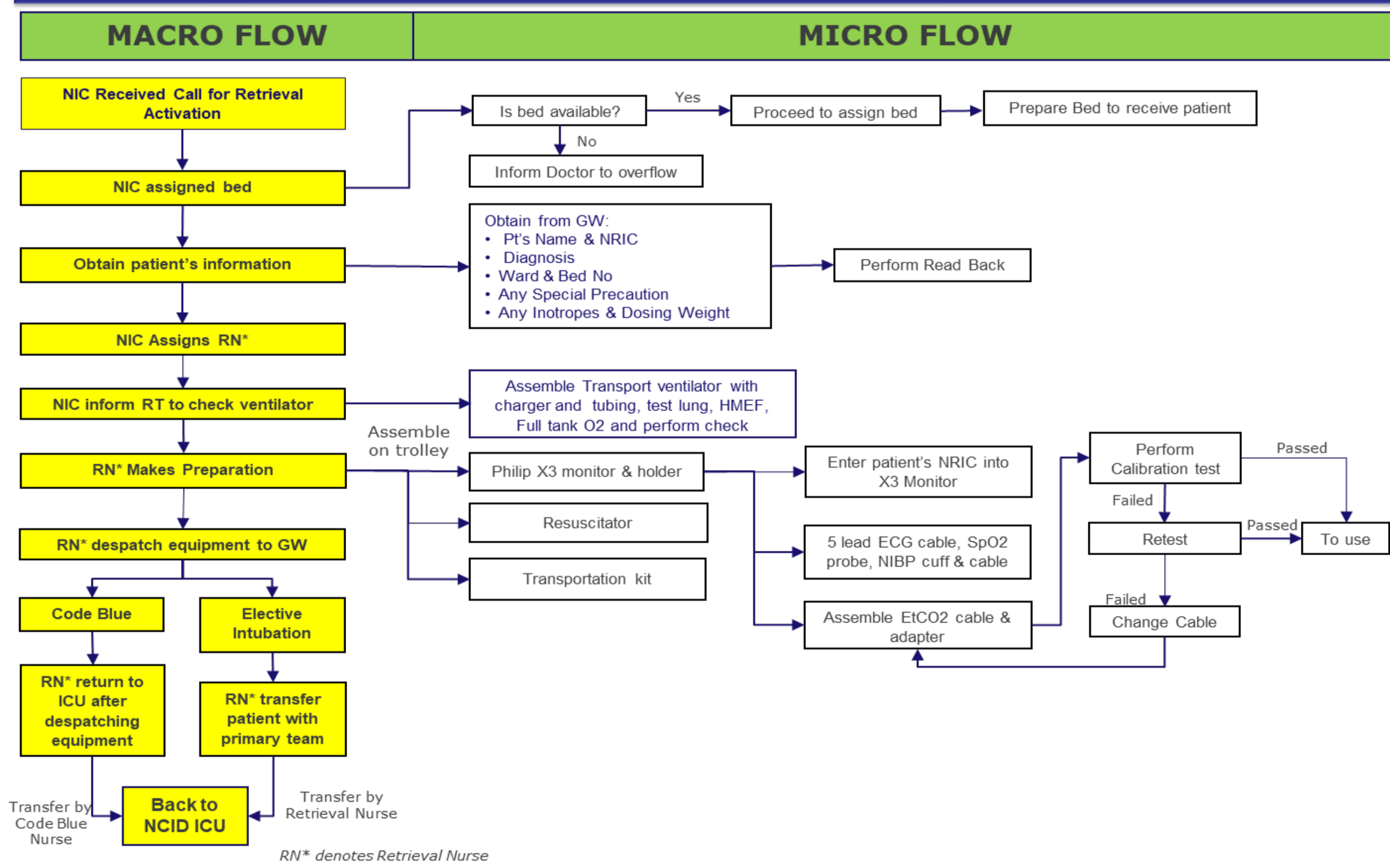
Am J Crit Care(2011) Vol 20

Baseline Data on Compliance to Retrieval Protocol from July to August 2019

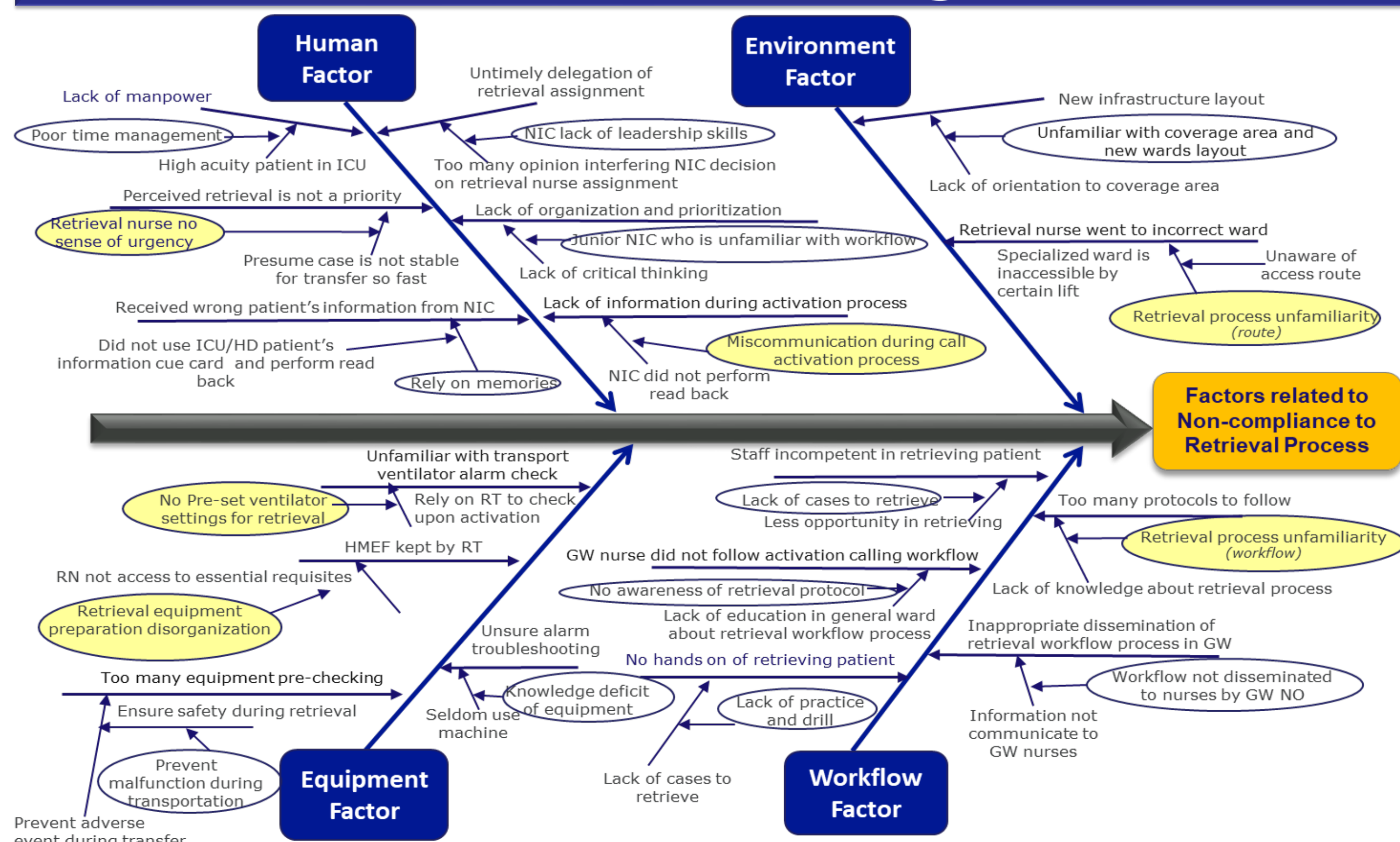
Month	Jul	Aug
Total no of Retrieval	4	14
Met	2	6
Not Met	2	8
% of Compliance	50%	42.85%

Pre Intervention Median = 46%

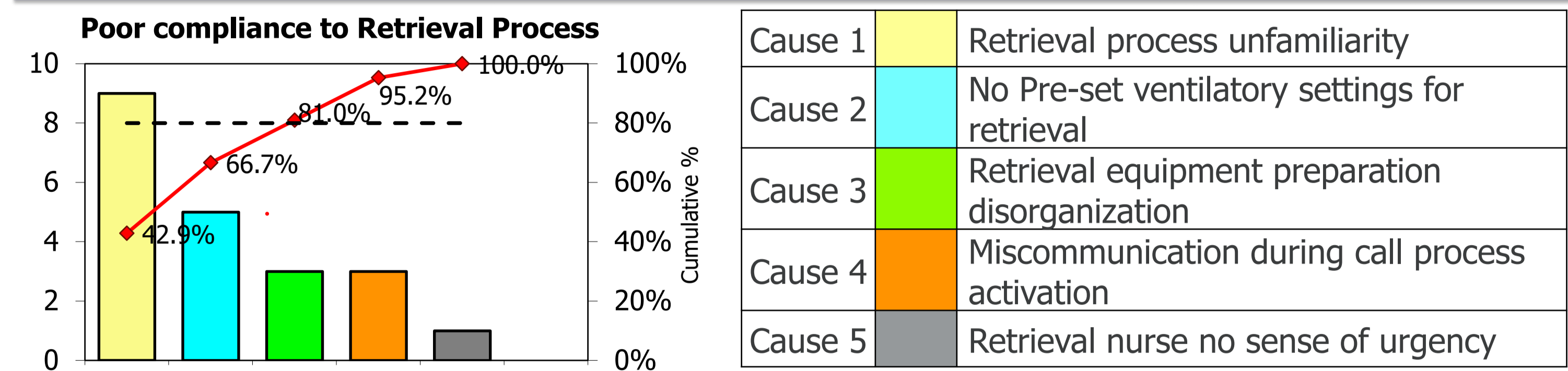
Flow Chart of Process



Cause and Effect Diagram



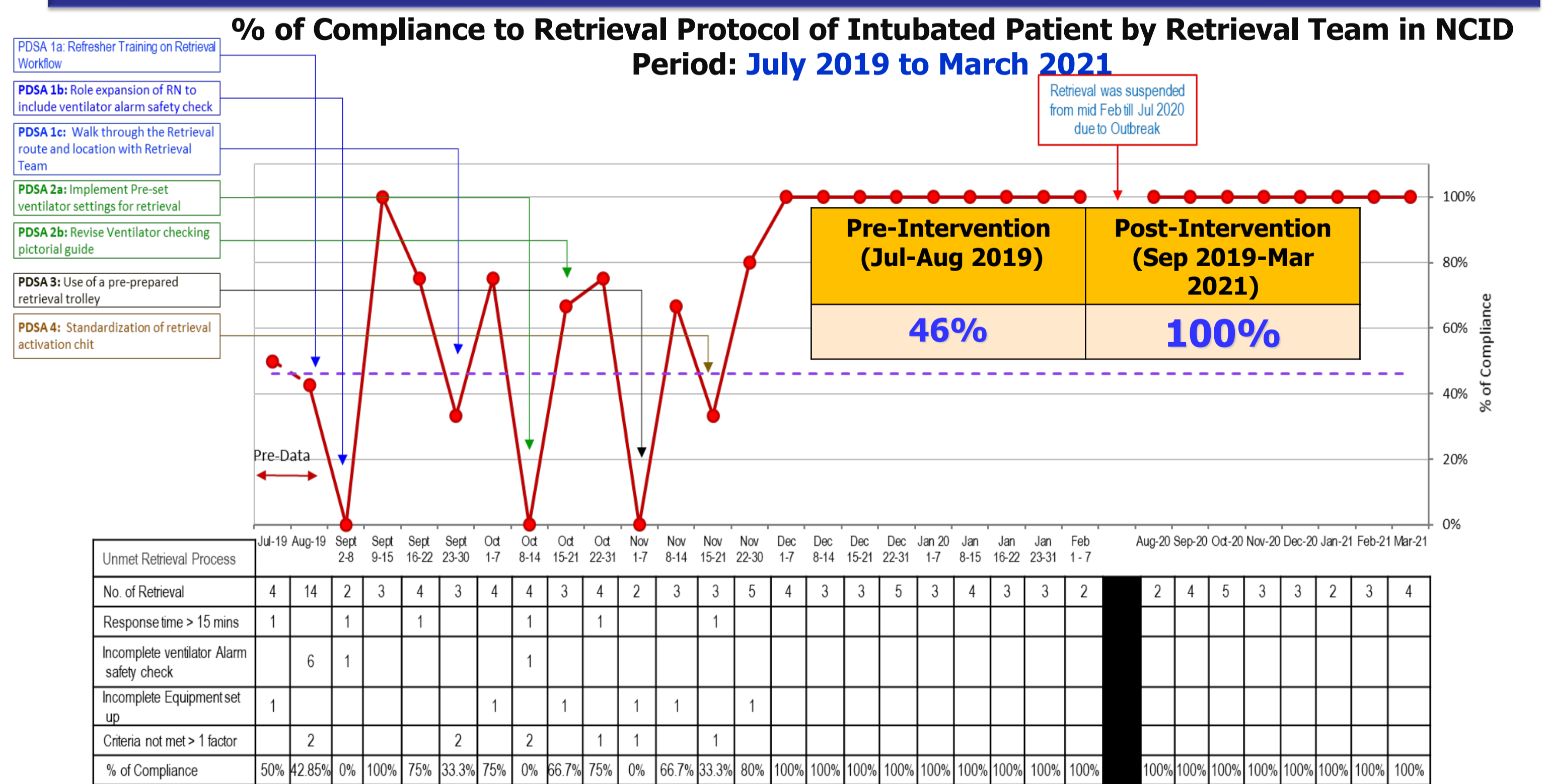
Pareto Chart



Implementation

CAUSES	INTERVENTIONS	IMPLEMENTATION DATE
Cause 1: Retrieval process unfamiliarity	PDSA 1a: Refresher Training on Retrieval Workflow	15 Aug 2019
	PDSA 1b: Role expansion of RN to include ventilator alarm safety check	7 Sep 2019
	PDSA 1c: Walk through retrieval route and coverage location with all retrieval nurse	23 Sep 2019
Cause 2: No Pre-set ventilator settings for retrieval	PDSA 2a: Implement Pre-set ventilator settings for retrieval	12 Oct 2019
	PDSA 2b: Revise ventilator checking pictorial guide	20 Oct 2019
Cause 3: Retrieval equipment preparation disorganization	PDSA 3a: Use of a pre-prepared retrieval trolley	7 Nov 2019
Cause 4: Miscommunication during call activation process	PDSA 4a: Create standard retrieval information slip for Nurse In Charge	15 Nov 2019

Results



Cost Savings

Task Required by the followings for 1 patient Transfer (in Mins)	Before	After	
RT (Before) / ICU Nurse (After)	Check Ventilator	\$1.29 X 15 = \$19.35	\$0.97 X 5 = \$4.85
GW Medical Officer	Transfer patient	\$1.41 X 45 = \$62.25	\$1.41 X 25 = \$35.25
General Ward Nurse 1	Transfer patient	\$0.97 X 45 = \$43.65	\$0.97 X 25 = \$19.40
General Ward Nurse 2	Transfer patient	\$0.97 X 45 = \$43.65	
ICU Nurse	Patient retrieval		\$0.97 X 25 = \$19.40
Duration (Average)	60 mins	30 mins	
Total Cost (Per retrieval)	\$168.90	\$78.90	
Time Savings (Per retrieval)		30 minutes	
Difference in Cost (Per retrieval)		\$78.90 - \$168.90 = - \$90.00	
Based on 2 Retrieval per month			
Cost savings (Monthly)		- \$90.00 x 2 = - \$180.00	
Cost savings (Annualised)		- \$180.00 x 12 = - \$2160.00	
Time savings (Annualised)		30 x 2 x 12 = 720 min (12 hours)	

Lessons Learnt

- Enhanced communication between various platform
- Buy in!!
- Working as a team
- Commitment to a changing behaviour both as an individual and to the organization
- Conducting weekly drill is challenging yet it empowered the ICU staff with higher efficiency in care

Strategies to Sustain

- Continue to collect data through retrieval log, evaluate and monitor of the progress
- Maintain the routine of frequent retrieval drill
- Include Pre-set ventilatory settings and alarm check as part of daily nursing special assignment to keep nurses competency warm at all times
- Having a culture change whereby the importance of timely and safely retrieval of patients was prioritized